



# UNITED STATES PATENT AND TRADEMARK OFFICE

nlw

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,032	12/14/2001	Yasuhiko Yamanaka	61352-012	6792
20277	7590	01/30/2004	EXAMINER	
MCDERMOTT WILL & EMERY 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			DUONG, THOI V	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/018,032	YAMANAKA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thoi V Duong	2871	<i>MW</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
- 4a) Of the above claim(s) 24-27, 32, 33 and 71-84 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 10-13, 16-18, 20-23, 28-31, 34-39, 42-44, 46-52, 55-57 and 59-70 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 9, 14, 15, 19, 40, 41, 45, 53, 54 and 58 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>1201</u> | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 2871

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I (claims 1-23, 28-31 and 34-84) in the Response to Restriction Requirement filed 08/26/2003 is acknowledged. Applicant further elected Group IA (claims 1-23, 28-31 and 34-70) in the Response to second Restriction Requirement filed 12/02/2003 is also acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Currently, claims 24-27, 32, 33 and 71-84 are withdrawn from consideration and claims 1-23, 28-31 and 34-70 are active in this application.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6-8, 10-13, 16-18, 20-23, 28-31, 36, 37, 39, 42-44, 46-48, 52, 55-57, 60, 65 and 66 are rejected under 35 U.S.C. 102(a) as being anticipated by Jang et al. (USPN 6,522,375 B1).

As shown in Figs. 2-4, Jang et al. discloses a reflective liquid crystal display panel comprising a liquid crystal layer 144 and a reflector 118 placed substantially

Art Unit: 2871

in parallel with the liquid crystal layer, in which an ambient light is reflected externally by the reflector through the liquid crystal layer, and the liquid crystal layer can be modulated by an externally applied voltage (col. 4, lines 4-33),

wherein the reflector 118 has a plurality of unit regions 118a, 118b having a concave/convex shape in a surface thereof,

wherein all the unit regions have the same concave/convex shape (polygon);

wherein at least part of concave portions or convex portions of the concave/convex shape are arranged according to a predetermined rule and concave/convex shapes of arbitrary parallel straight-line cross sections do not have the same regularity (col. 4, line 37 through col. 5, line 8);

wherein more than half of all the concave portions or the convex portions are arranged according to the predetermined rule;

wherein the concave portions or the convex portions of the concave/convex shape are repeatedly arranged in matrix; and

wherein the reflector 118 includes a reflecting film on a substrate 112, for reflecting the ambient light (col. 1, lines 24-31), an opposed substrate 132 is placed opposite to the reflector with the liquid crystal layer 144 interposed therebetween, and an electrode for modulating the liquid crystal layer is comprised of the reflecting film and a common electrode 138 formed on an inner surface of the opposed substrate 132.

Further, as shown in Figs. 5 and 6, Jang et al. discloses a display comprising: display means for displaying predetermined information (see Fig. 2); and an optical member 218 placed on a light path of light for displaying the information, in which an

Art Unit: 2871

optical characteristic in a direction in which the displayed information is observed varies in a plane, at least part of optical action centers 218e at which the optical characteristic has a local maximum value (col. 5, lines 52-57) are arranged in the plane according to a predetermined rule, and arrangements of the optical action centers on arbitrary parallel straight lines III-III in the plane do not have the same regularity.

Also, as shown in Fig. 5, by making a proper connection, at least part of the convex portions 218e, 218d may be arranged in a substantially shape such as spiral shape or radial shape or ellipsoidal radial shape or ellipsoidal spiral shape.

With respect to claims 12 and 21, as to the product-by-process limitation “wherein the concave portions or the convex portions of the concave/convex shape are formed through a process including mask exposure and development, the mask exposure using a photomask including light-blocking regions or light-transmitting regions at least part of which are arranged according to a predetermined rule” of those claims, it has been recognized that “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process”. *In re Thorpe*, 227 USPQ 964,966 (Fed. Cir. 1985). See also MPEP 2113.

Art Unit: 2871

4. Claims 1-3, 6-8, 10-13, 16-18, 20-23, 36-39, 42-44, 46, 48-52, 55-57 and 59-70 are rejected under 35 U.S.C. 102(b) as being anticipated by Taniguchi et al. (USPN 6,099,134).

As shown in Figs. 27A and 27B, Taniguchi et al. disclose a backlighting unit for a liquid crystal display device (col. 2, lines 59-67) comprising:

light emitting means 1, 2 for emitting light; and

an optical member 11, which is placed on a light path of the emitted light, in which an optical characteristic in a direction in which displayed information is observed varies in a plane, at least part of optical action centers (convexes 16) at which the optical characteristic has a local maximum value are arranged in the plane according to a predetermined rule (col. 3, line 16 through col. 4, line 7), and arrangements of the optical action centers on arbitrary parallel straight lines in the plane do not have the same regularity as shown in Figs. 18A and 18B,

wherein, as also shown in Figs. 18A and 18B, the optical member comprising a plurality of squared dot regions formed at random, wherein the optical characteristic is the same in all dot regions and wherein the dot regions are formed in matrix in the plane;

wherein the optical characteristic varies substantially discontinuously at a boundary between a minute region having the optical action center 16 as a center and the other region, and has substantially the same value in each region (Figs. 27B, 18A and 18B);

wherein the optical action centers are repeatedly arranged in matrix (Fig. 18B);

Art Unit: 2871

wherein the optical characteristic is a reflectance or a refractive index or a transmittance (col. 2, line 64 through col. 3, line 13); and

wherein at least part of the optical action centers are arranged so as to have positional relationship similar to arrangement obtained by symmetric transformation of a plurality of points regularly arranged in a concentric shape on an arbitrary two-dimensional coordinate system as shown in Fig. 7.

Also, as shown in Fig. 7, by making a proper connection, at least part of the dots (convex portions) may be arranged in a substantially shape such as spiral shape or radial shape or ellipsoidal radial shape or ellipsoidal spiral shape.

With respect to claims 12 and 21, as to the product-by-process limitation “wherein the concave portions or the convex portions of the concave/convex shape are formed through a process including mask exposure and development, the mask exposure using a photomask including light-blocking regions or light-transmitting regions at least part of which are arranged according to a predetermined rule” of those claims, it has been recognized that “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process”. *In re Thorpe*, 227 USPQ 964,966 (Fed. Cir. 1985). See also MPEP 2113.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 67-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang et al. (USPN 6,522,375 B1) as applied to claims 1-3, 6-8, 10-13, 16-18, 20-23, 28-31, 36, 37, 39, 42-44, 46-48, 52, 55-57, 60, 65 and 66 above in view of Kataoka et al. (USPN 6,266,111 B1).

Jang et al. discloses a reflective liquid crystal display device that is basically the same as that recited in claim 67-70 except for a light emitting means for emitting light. As shown in Figs. 2-5, Kataoka et al. discloses a reflective liquid crystal display device comprising a light emitting means 120 and an optical member 10 having high diffusion efficiency to increase the luminance of the display (col. 2, lines 5-11). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the reflective LCD device of Jang et al. with the teaching of Kataoka et al. by employing a light emitting means for emitting light to increase the luminance of the display.

***Allowable Subject Matter***

7. Claims 4, 5, 9, 14, 15, 19, 40, 41, 45, 53, 54 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in



Art Unit: 2871

independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: none of the prior art of record discloses, in combination with other limitations as claimed, concave/convex portions being arranged such that a radius of a coordinate from an origin is a square root of  $n$  as a natural number and a phase angle is  $137.5 \text{ degrees} \times n$  on the arbitrary two-dimensional coordinate system.

The most relevant reference, USPN 6,099,134 of Taniguchi et al., fails to disclose or suggest such arrangement of the optical action centers. As shown in Fig. 7, the reference of Taniguchi et al. only discloses a distribution state of the dots (or convex portions) having radii  $R$  according to the formula (1) in column 4, line 20, where the radial distribution function  $g(R)$  is equivalent to the sum of the dot numbers normalized or standardized with the distances  $R$  (col. 4, lines 8-29).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.


Art Unit: 2871

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong

01/20/2004

  
0082/HUN/21-07/0001  
TECHNOLOGY CENTER 2800  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800